

Woodworker's Information

LUMBER:

Board Feet: 1 board foot = 144 cu inches or 1”T x 12”W x 12”L

Calculation: $\frac{(\text{thickness inches} \times \text{width inches} \times \text{length feet})}{12} = \text{board feet}$
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Thickness: 4/4” = one inch, 5/4” = 1 ¼ inches, 6/4” = 1 ½ inches, 8/4” = 2 inches, 10/4” = 2 ½ inches, 12/4” = 3 inches, 16/4” = 4 inches

Milling: RGH = rough surface, Hit & Miss = quickly planed - needs more planing or sanding to attain smooth surface, S2S = surfaced 2 sides (planed to thickness), 1E = 1 edge jointed, S2S 1E = surfaced 2 sides & 1 edge jointed, S4S = surfaced four sides, RW = random width, R/L = random length, T&G = tongue & groove, KD = kiln dried

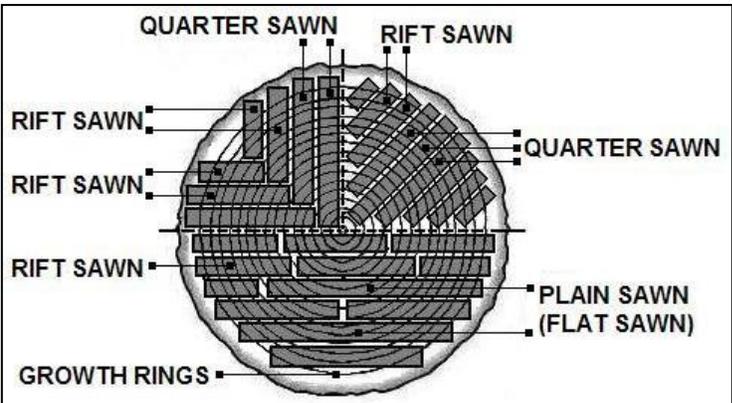
Cutting Methods:

Plain Sawn (Flat Sawn) - The boards are cut so the growth rings meet the face of the board at an angle of 30° or less; the grain is roughly parallel to the wide faces.

Quarter Sawn - The boards are cut so the growth rings are 60° - 90° to the face of the board; the grain runs roughly perpendicular to the wide faces of the boards. Quarter sawn boards display straight figure, often with a ribbon-stripe or flake pattern.

Rift Sawn - The growth rings are 30° - 60° to the face of the board. Rift sawn boards display straight figure, sometimes called comb grain.

Grade: SUP = superior, S/B = select & better, FAS = firsts & seconds, FG = furniture grade or frame grade, #1 COM = number one common, M/G = Mixed Grain (combination of plain sawn, quarter sawn, and rift sawn boards in one unit)



PLYWOOD:

Abbreviations: P/S = plain sliced, 1PF = 1 piece faced, R/C = rotary cut, S/C = solid core, T&G = tongue & groove

Grade: A-1 = A Face & #1 Back, A-2 = A Face & #2 Back, A-3 = A Face & Mill Option Back (could be anything), BBB = B Face & BB Back

WEIGHT AND SPECIFIC GRAVITY:

Density	Weight (lbs/ft ³) (at 12% moisture content)	Specific Gravity (the relative weight compared with that of an equal volume of water)
Exceptionally light	Under 18.7	0.30 or less
Light	18.7 – 28	0.30 - 0.45
Medium	28 – 41	0.45 - 0.65
Heavy	41 – 50	0.65 - 0.80
Very heavy	50 – 62	0.80 - 1.00
Exceptionally heavy	62 or above	1.00 or more

Woodworking Safety

ULTIMATELY YOUR SAFETY IS YOUR RESPONSIBILITY

- Read and understand the instruction manuals that come with your power tools before operating them. Learn each tool's application as well as the limitations and specific hazards peculiar to it.
- **ALWAYS WEAR EYE AND HEARING PROTECTION**
- **ALWAYS WEAR A DUST MASK OR RESPIRATOR**

TOXICITY:

Some people are individually sensitive to different species of wood dust. Eye, respiratory, and skin irritation can occur. Some examples are:

Rosewoods (<i>Dalbergia</i> spp.)	The wood in the rosewood genus affects a high proportion of people. Skin rash is the primary symptom. May also cause asthma.
Black Walnut (<i>Juglans nigra</i>)	The wood and dust from Black Walnut can be a sensitizer for the eyes and skin. Some people may experience respiratory problems.
Goncalo Alves (<i>Astronium graveolens</i>)	Goncalo Alves is a member of the poison ivy family, Anacardiaceae. Symptoms can include extremely severe skin rash, but individual sensitivity varies greatly.
Cocobolo (<i>Dalbergia retusa</i>)	Skin irritation can result from the dust of Cocobolo. Also watch out for dermatitis, conjunctivitis, nausea, bronchial asthma, and irritation to the nose and throat.
Ipê (<i>Tabebuia</i> spp.)	The fine yellow dust produced by machining Ipe' may cause dermatitis, eye irritation, or respiratory problems in some people. May also cause headache and visual disturbance.
Iroko (<i>Chlorophora excelsa</i>)	This durable, African wood is commonly used as a teak substitute. Iroko can cause skin rash and respiratory problems: dermatitis, furunculosis (boils), asthma, nettle rash, edema of eyelids, sneezing, and giddiness.
Padauk (<i>Pterocarpus soyauxii</i>)	The dust and wood from Padauk can cause eyelid swelling, skin and respiratory irritation, as well as nausea. Beware of the dust as it can dye your clothing orange!
Teak (<i>Tectona grandis</i>)	Skin rash is common when working with Teak. The primary sensitizer in the wood can trigger sensitivity to allergens in other, unrelated woods.
Wengé (<i>Millettia laurentii</i>)	The dust and wood from Wengé may cause dermatitis, giddiness, drowsiness, visual problems, and stomach cramps. Irritation of the eyes, skin, and respiratory system can occur. The splinters can go septic if left in the skin.

Eye, nose and skin protection should always be used when working with wood.

Afrormosia

Scientific name: *Pericopsis elata*

Distribution: West Africa

Other Names: *Assamela, Mohole, Kokrodua, ayin, egbi, ejen*

DESCRIPTION: Freshly cut Afrormosia is medium brown, and it will darken with exposure to a deep orange brown. It can have wide color variation from light blond to dark brown. The texture is medium fine, and the grain can be straight to interlocked. The wood is heavy and dense, with high bending and crushing strength. This is a very durable wood and resistant to decay. Afrormosia must not be used in contact with ferrous metals where water is present to avoid corrosion. Blue staining can be caused by the tannin in the wood. **Weight:** 43 lbs/ft³ (3.58 lbs/bd ft) **Specific Gravity:** 0.69 **Janka Hardness:** 1570 lbf

WORKING PROPERTIES: Afrormosia works well, but there is a slight tendency to pick up the grain in planing due to interlocked grain. A reduced cutting angle of 20° is recommended. Moderate blunting of cutting edges may occur. Pre-boring is recommended for nails and screws. It glues well and takes an excellent finish.

MAIN USES: Afrormosia is good for exterior and interior uses, including boat building, marine piling, agricultural implements, flooring, stairs, joinery, and cabinetmaking.

Alder, Red

Scientific name: *Alnus rubra*
always grown near water

Distribution: Pacific Coast of USA and Canada;

Other Names: *Western alder, Oregon alder*

DESCRIPTION: The heartwood of Red Alder is light brown to reddish brown. It is a relatively soft hardwood of medium density that has low bending strength, shock resistance and stiffness. When stained, it blends with walnut, mahogany, or cherry. It has good dimensional stability after drying. **Weight:** 33 lbs/ft³ (3.0 lbs/bd ft) **Specific Gravity:** 0.53 **Janka Hardness:** 590 lbf

WORKING PROPERTIES: Red Alder works well with hand and power tools. There is a slight tendency to pick up the grain in planing, which can be overcome by using a reduced cutting angle. Keep tools sharp. Alder is excellent for turning. It nails, screws, and glues well, and can be sanded, painted, or stained to a good finish.

MAIN USES: Red Alder is used in furniture, small laminated articles, kitchen cabinets, doors, shutters, mouldings, panel stock, plywood corestock, utility plywood, turnings, carvings and kitchen utensils. It is also used for cooking and smoking fish.

Apitong

Scientific Name: *Dipterocarpus* spp. **Distribution:** Southeast Asia

Other Names: This genus consists of about 80 species of trees, and they are known by names according to the country of origin. Principal species - Keruing, Kapur, Gurjun (Malaysia), Apitong (Philippines).

DESCRIPTION: The heartwood of Apitong and the other evergreen species in this group varies from light to dark brown with a reddish or purplish cast. The sapwood is gray or buff with a pinkish or purplish cast. **The grain is straight to shallowly interlocked, and texture is moderately coarse, but even. Some species contain oleo-resin, and when abundant may exude over the surface of sawn lumber, particularly if the lumber is exposed to the sun or excessive heat. The species are high in bending strength, and crushing strength, and in stiffness. These woods are very heavy. Weight:** 40-60 lbs/ft³, avg. 46 lbs/ft³ (4.0 lbs/bd ft) **Specific Gravity:** 0.74 to 0.88 **Janka Hardness:** 1390 lbf

WORKING PROPERTIES: Apitong is difficult to work, and blunting to cutting edges is moderate to severe from the silica in the wood. Tungsten carbide-tipped tools and saws are advised. Straight grained stock machines cleanly but with a fibrous finish. Planing requires a reduced cutting angle of 20° on interlocked grain. Resin adhering to tools, machines, and fences can be troublesome. Nailing is satisfactory and gluing results are variable. The timbers stain well, but varnishing or polishing requires care due to the resin.

MAIN USES: Apitong and the other woods in the species are used for heavy duty flooring, particularly in box cars, trucks, and trailers. They are also used for mine guides, heavy and light construction, railroad ties, wharf decking, bridges, keels, bumpers and stems for boat building, and platforms around chemical vats.

Ash, American White

Scientific name: *Fraxinus americana*

Distribution: USA and Canada

Other Names: Fraxinus spp - Green ash, Red ash, Black ash, Brown ash, Canadian ash

DESCRIPTION: White Ash is light yellow to yellowish-brown and coarse, but even, textured. It is usually straight-grained, but wavy grain is sometimes present. It has very good overall strength, toughness, elasticity, and stiffness properties relative to its weight. It has excellent shock resistance and is excellent for steam bending. **Weight:** 41 lbs/ft³ (4.0 lbs/bd ft) **Specific Gravity:** 0.66 **Janka Hardness:** 1320 lbf

WORKING PROPERTIES: White Ash machines, nails, screws, and glues well. It stains very well and can be brought to a good finish. It dries fairly easily with minimal degrade, and there is little movement in performance.

MAIN USES: White Ash is used in baseball bats, sporting equipment, furniture, flooring, doors, kitchen cabinets, paneling, tool handles, turnings, architectural millwork, and moulding. It is particularly suitable for food and liquid containers since there is no odor or taste.

Avodiré

Scientific Name: *Turreanthus africanus*

Distribution: *Tropical West Africa*

Other Names: Apeya, Apaya, Engan, Lusamba, Esu, Agbe

DESCRIPTION: The heartwood of Avodiré darkens on exposure to a golden yellow, with a natural luster or sheen. It has a moderate to fine texture. The grain is chiefly straight, but is often wavy or irregularly interlocked, producing a very attractive mottled figure on quartered surfaces. **Weight:** 34 lbs/ft³ (3.25 lbs/bd ft) **Specific Gravity:** 0.55 **Janka Hardness:** 1170 lbf

WORKING PROPERTIES: Avodiré works and turns fairly easily, with some chipping due to interlocked grain. It glues, sands and finishes well, but the mottled figure stains with difficulty.

MAIN USES: Avodiré is used in furniture, boats, architectural trim, decorative items, and marquetry.

Aspen

Scientific name: *Populus tremuloides*

Distribution: *Canada and Northern USA*

Other Names:

DESCRIPTION: Aspen is pale yellow to white. It is lightweight and soft. It is straight grained, with a uniform medium texture. **Weight:** 26 lbs/ft³ (2.5 lbs/bd ft) **Specific Gravity:** 0.35 **Janka Hardness:** 350 lbf

WORKING PROPERTIES: Aspen machines well and is easy to work with hand and machine tools. Use sharp knives when planing to avoid a fuzzy surface. It has poor nail-holding capability. It glues and finishes well.

MAIN USES: Aspen is used as a white wood in intarsia projects and is common in boxes, crates, veneer, and plywood.

Basswood

Scientific name: *Tilia americana*

Distribution: *East coast of Canada and Eastern USA*

Other Names: American lime, American linden, American Whitewood

DESCRIPTION: Basswood is creamy white to pale brown. It is lightweight and soft with generally low strength properties. It is straight grained and fine textured. It has good dimensional stability when dry. Basswood has a poor steam-bending classification. **Weight:** 26 lbs/ft³ (2.5 lbs/bd ft) **Specific Gravity:** 0.41 **Janka Hardness:** 410 lbf

WORKING PROPERTIES: Basswood machines well and is very easy to work with hand tools, making it a premier carving wood. It nails, screws, and glues fairly well and can be sanded and stained to a good smooth finish.

MAIN USES: Basswood is used in carvings, turnings, furniture, pattern making, toys, mouldings, millwork, beehives, piano keys, picture frames, boxes, crates, food containers, and laundry and dairy appliances. An important specialized use is window blinds and shutters.

Beech, European

Scientific Name: *Fagus sylvatica*

Distribution: *Central Europe, UK, West Asia*

DESCRIPTION: European Beech ranges from light brown in color to a pale pinkish-brown. The lumber is often steamed, and the color becomes reddish-brown. It has a fine, even texture and is usually straight-grained. The quartersawn surface shows light ribbon-stripping with small fleck figure. **There can be large movement in service, even after kiln drying.** The steam bending properties are exceptionally good, even with irregular grain. **Weight:** 45 lb/ft³ (4.25 lbs/bd ft) **Specific Gravity:** 0.72 **Janka Hardness:** 1450 lbf

WORKING PROPERTIES: The ease of working European Beech varies with growth conditions and seasoning. Some material or badly dried timber will bind on saws, burn when crosscut, and be difficult to plane. Beech offers medium resistance to hand and power tools, and has a moderate blunting effect on cutting edges. Pre-boring is necessary for nails and screws. It glues easily, stains well, and takes an excellent finish.

MAIN USES: European Beech is used in cabinets, high-class joinery, solid and laminated furniture, desks and work benches, chair making, shoe heels, sports equipment, toys, spools, bobbins, wood ware, tool handles, turnery, musical instruments, domestic flooring, heavy construction, marine piling (when pressure treated), core stock and utility plywood.

Birch - Yellow, Red, or Flame

Scientific Name: *Betula alleghaniensis*

Distribution: *Canada and USA*

Other Names: Hard Birch, Betula wood, Canadian yellow birch

DESCRIPTION: The wood of Yellow Birch is light yellow to light brown. Red Birch is the heartwood of the Yellow Birch tree, and can be reddish-brown. Flame Birch is highly figured, with three dimensional coloring in white to light yellow to reddish-brown. The sapwood may be called white birch. Birch is heavy, hard and strong. It dries rather slowly with little degrade, but has moderately high shrinkage, so is susceptible to movement in performance. It has good crushing strength and shock resistance and very good bending properties. **Weight:** 44 lbs/ft³ (3.0 lbs/bd ft) **Specific Gravity:** 0.71 **Janka Hardness:** 1260 lbf

WORKING PROPERTIES: Birch works fairly easily with a moderate blunting effect on cutting edges. It glues well with care, takes stain extremely well, and nails and screws satisfactorily, although pre-boring is advised. If straight-grained, the wood finishes smoothly.

MAIN USES: Birch is used in furniture, millwork, paneling, doors, flooring, kitchen cabinets, turnings, bobbins, shuttles, spools, upholstery frames, plywood, cooperage, and toys.

Bloodwood

Scientific Name: *Brosimum paraense* **Distribution:** Brazil, Tropical America

Other Names: Muirapiranga, Satinee, Cardinal Wood, Satiné Rubané

DESCRIPTION: The heartwood color of Bloodwood varies from gray-red to deep, rich red, with a golden luster and variegated yellow and red stripes. The color will darken to a deep brown with age. The grain varies from straight to variable, fine textured and smooth with distinct rays. **Bloodwood is a very hard, heavy, and tough wood.** **Weight:** 63 lbs/ft³ (5.75 lbs/bd ft) **Specific Gravity:** 1.01 **Janka Hardness:** 2900 lb_f

WORKING PROPERTIES: Bloodwood works fairly easily with hand and power tools in all operations. It may need pre-boring for nails and screws. It holds screws well, and glues and stains well. Bloodwood polishes to a very good finish.

MAIN USES: Bloodwood is used in cabinetmaking, furniture, marquetry, decorative inlay, fancy boxes, turnery, veneers, intarsia, drum sticks, xylophone and organ pipes, and billiard cue butts.

Bocote

Scientific Name: *Cordia alliodora* **Distribution:** West Indies, Tropical Central America, Brazil, and Argentina

Other Names: Light American Cordia, Anacahuite, Siricote, Cupané, Canalete, Louro pardo, Loro negro

DESCRIPTION: Bocote is a particularly fine, beautiful wood, with heartwood color varying from cream, tobacco, green, golden brown, reddish brown, and black. The sapwood is grayish or yellowish color. Some highly figured Bocote has variegated irregular markings with tiny knots. It has an attractive ray fleck figure if quartersawn. It has an oily or waxy appearance. Bocote is a strong, lustrous wood, with fine to medium, and uniform texture. The grain is straight or shallowly interlocked. It is highly resistant to insects. Bocote's compression strength is comparable to mahogany and its bending strength is comparable to teak. **Weight:** 48-65 lbs/ft³ (4.0-5.5 lbs/bd ft) **Specific Gravity:** 0.63-0.84 **Janka Hardness:** 2010 lb_f

WORKING PROPERTIES: Bocote is easy to work and responds well to both hand and power tools. Because of the oils in the wood, gluing can be difficult, but can be done with care. Pre-boring is recommended for nails and screws. It polishes to a smooth finish.

MAIN USES: Sought for its great beauty and ease of working, Bocote is in great demand for boat decking, fine cabinetry, fine furniture, rifle stocks, pistol grips, guitars, knife

handles, wooden jewelry, decorative and figured veneer, mouldings, inlay work, joinery, and turnery. Bocote is sometimes used as a substitute for mahogany, teak, or walnut.

Bubinga

Scientific Name: *Guibourtia* **Distribution:** *Cameroon, Gabon, Zaire*

Other Names: African rosewood, Kevasingo, Essingang, Buvenga

DESCRIPTION: Bubinga is reddish-brown with deep red and purple grain figure. It has beautiful grain variation, from striped to mottled figuring. The trees are large, with logs weighing up to 10 tons and yielding wide and long lumber. The wood is strong, heavy, and hard. **Weight:** 55 lbs/ft³ (5.0 lbs/bd ft) **Specific Gravity:** 0.88 **Janka Hardness:** 2410 lbf

WORKING PROPERTIES: Bubinga works well with hand or power tools and machines to a fine finish. Maintain sharp cutting edges and use a reduced cutting angle of 15° to successfully work with irregular (mottled) graining. **There is moderate to severe blunting of cutting edges. Pre-boring is recommended for nails and screws. Gluing may be difficult due to gum pockets. The wood stains easily and can be brought to an excellent finish.**

MAIN USES: Availability of very wide lumber makes Bubinga an attractive wood for furniture, paneling and cabinetry. It is an excellent turnery wood and works well for spindle or face-plate turned wood items; also used for knife handles, gun stocks, and fancy goods.

Catalpa

Scientific Name: *Catalpa* spp. (*C. speciosa* & *C. bignonioides*) **Distribution:** *Native to eastern United States, but located throughout North America*

DESCRIPTION: Catalpa is grayish tan to golden brown. It has a strong grain pattern similar to ash and oak. The grain is straight, with coarse texture. Catalpa is rated as durable to decay resistance and holds up well in direct ground contact. **Weight:** 29 lbs/ft³ (2.42 lbs/bd ft) **Specific Gravity:** 0.38 **Janka Hardness:** 550 lbf

WORKING PROPERTIES: Bubin Catalpa is easy to work with hand or power tools. Use care when sanding to avoid creating dents or ridges due to the variation of hardness within a board. Using a rigid backed sander or sanding block is recommended. It turns, glues, and finished well. If a smooth finish is desired, fill the pores prior to finishing.

MAIN USES: Catalpa is used for fence posts, cabinetry, carving, and as a utility wood.

Cedar, Spanish

Scientific Name: *Cedrela odorata* **Distribution:** *Central and South America, except Chile*

Other Names: South American cedar

DESCRIPTION: Spanish Cedar is light to reddish-brown. It has a fine texture. The heartwood is rated as durable, and the wood has excellent outdoor weathering characteristics. Spanish Cedar gives off a distinct, spicy odor when cut. It is not a true cedar. **Weight:** 30 lbs/ft³ (3.0 lbs/bd ft) **Specific Gravity:** 0.40 **Janka Hardness:** 600 lbf

WORKING PROPERTIES: Moderately soft and light, Spanish Cedar is easy to work with hand and power tools, and is good for carving. There is a tendency for wooly surfaces to occur. It may be somewhat difficult to bore cleanly. It has good nailing and gluing properties, and it stains and finishes well. Gums and oils are sometimes a problem in polishing.

MAIN USES: Spanish Cedar is used in humidior linings, cabinets, fine furniture, musical instruments, guitar necks, jewelry boxes, boat building, exterior millwork, doors, windows, shingles, decorative and utility plywood.

Cedar, Tennessee Red

Scientific Name: *Juniperus virginiana* **Distribution:** USA and Canada

Other Names: *Virginian Pencil cedar, Eastern Red cedar*

DESCRIPTION: A firm, stable softwood, Tennessee Aromatic Red Cedar is highly prized for its beautiful, warm, rich, red and white colors and its distinctive, everlasting, aroma. It has numerous knots that make attractive, distinctive patterns. Otherwise, it is straight and close grained. Due to its natural oils, it is never painted or stained. The wood is strong and durable. **Weight:** 33 lbs/ft³ (2.75 lbs/bd ft) **Specific Gravity:** 0.53 **Janka Hardness:** 900 lbf

WORKING PROPERTIES: Tennessee Aromatic Red Cedar is lightweight and easy to work with hand or power tools. It glues, nails, and screws well. It sands easily and finishes well, although it is not finished in applications where the aroma is desired. The aroma fades with time, especially with exposure to air. Light sanding restores the scent.

MAIN USES: Tennessee Aromatic Cedar is most commonly associated with blanket chests, wardrobes, clothes closet interiors, storage room paneling, and dresser drawer linings, but is also used for scientific instruments, novelties, boxes, crafts, veneers, greenhouse construction, windowsills, and small boat decks.

Chechen

Scientific Name: *Metopium brownei* **Distribution:** Mexico, Central America, and the Caribbean

Other Names: Black poison wood, Caribbean rosewood, Chechem, Chechum, Coral sumac, Cedro prieto

DESCRIPTION: The heartwood of Chechen is variegated cocoa brown, reddish-brown and purple, with a distinct golden luster. The sapwood is a sharp contrast at gray-tan. It is close grained, fine textured, hard, heavy, and strong. The grain is usually straight, but with some mottled or wavy figure. The wide variety of color, grain pattern, and figure makes this an especially interesting exotic wood. The boards should be carefully selected when trying to match color and figure. **Weight:** 53 lbs/ft³ (4.5 lbs/bd ft) **Specific Gravity:** 0.85 **Janka Hardness:** 2300 lb_f

WORKING PROPERTIES: Chechen is moderately hard to work, but finishes smoothly with a high golden luster. It turns well. Pre-boring is recommended for nails and screws. There is a moderate blunting effect on cutting edges and resin in the wood may coat the blades. The saw dust can stain fabrics.

MAIN USES: Chechen is used in accent furniture, cabinets, millwork, tool handles, turnery, game boards, pool cues, flooring, and specialty items.

Cherry, American

Scientific name: *Prunus serotina*

Distribution: *Canada and USA*

Other Names: **Black cherry, Cabinet cherry, Rum cherry, Whisky cherry, Wild cherry**

DESCRIPTION: The heartwood of Cherry varies from light brown to reddish-brown to rich red. The sapwood is whitish to pinkish-brown. Cherry will darken upon exposure to sunlight to a dark reddish-brown. The wood has fine, straight, close grain, and smooth texture, narrow brown pith flecks, and small gum pockets. It is of medium density, low stiffness, medium strength, and medium shock resistance. It has good wood bending properties. **Weight:** 36 lbs/ft³ (4.0 lbs/bd ft) **Specific Gravity:** 0.58 **Janka Hardness:** 950 lb_f

WORKING PROPERTIES: Cherry is easy to machine and easy to burn. Care should be taken to keep cutting edges sharp to prevent burning. Cherry nails, glues, and stains well. When sanded it produces an excellent, smooth finish.

MAIN USES: Cherry is used in fine furniture and cabinet making, mouldings, millwork, kitchen cabinets, paneling, flooring, doors, boat interiors, musical instruments, turnings, carvings, and high class joinery.

Cypress (Baldcypress)

Scientific Name: *Taxodium distichum* **Distribution:** *Southeast USA*

Other Names: **Swamp-cypress, southern-cypress, tidewater red-cypress, black cypress, white cypress, yellow cypress**

DESCRIPTION: The heartwood of Cypress varies in color from a light yellowish-brown to a dark brown. The wood in the southern swamps is darker in color than that which grows farther north on drier land. Some Baldcypress has light streaks through a dark background and this makes an attractive figure. Baldcypress is a very durable wood and quite resistant to decay. It is medium hard, strong, with close, straight grain. When rubbed, the

wood has a greasy feeling. **Weight:** 31 lbs/ft³ (2.3 lbs/bd ft) **Specific Gravity:** 0.46
Janka Hardness: 510 lb_f

WORKING PROPERTIES: Cypress works very easily with hand or power tools and has little dulling effect on the cutters. It finishes cleanly in most operations. It nails, screws, and glues well, and takes stain, paint, polish, etc. very well.

MAIN USES: The strong, extremely durable timber of cypress is used for siding, boats, outdoor furniture, greenhouse construction, tanks, boxes, crates, and railroad ties.

Ebony, Gaboon

Scientific Name: *Diospyros ebenum*

Distribution: Southern Nigeria, Ghana, Cameroon, Zaire

Other Names: Gabon ebony, Cameroon ebony, Madagascar ebony, etc. (according to country of origin)

DESCRIPTION: Gaboon Ebony is marketed in some locations as short billets of heartwood only. It is a very hard, heavy, strong hardwood, deep black in color, and little grain figure. Some brown streaking may be present in the wood. It will sink in water!

Weight: 63-64 lbs/ft³ (6.0 lbs/bd ft) **Specific Gravity:** 1.03 **Janka Hardness:** 3080 lb_f

WORKING PROPERTIES: Because the wood of Gaboon Ebony is brittle and extremely hard, it machines and carves with difficulty. It also tends to dull tools. It finishes smoothly and polishes to a high natural shine.

MAIN USES: Gaboon Ebony is used in inlays, turned and sculpted items, knife and tool handles, gavels, musical instruments, and piano keys.

Goncalo Alves

Scientific Name: *Astronium graveolens*

Distribution: Brazil

Other Names: Tigerwood

DESCRIPTION: Goncalo Alves ranges in color from light brown to red to orange-brown to deep mahogany red-brown with a striking figure created by beautiful, bold, brown to nearly black irregular markings or striping. The texture is fine to medium and uniform, with a fine grain, varying from straight to interlocked and wavy. The wood is rated highly durable and has strength values considerably higher than any well-known U.S. species. **Weight:** 59 lbs/ft³ (4.92 lbs/bd ft) **Specific Gravity:** 0.95 **Janka Hardness:** 2170 lb_f

WORKING PROPERTIES: Goncalo Alves is rather difficult to work, with a moderate to severe blunting effect on tools, which should be kept sharp. The contrasting layers of hard and soft material together with irregular or interlocked grain require a reduced cutting angle of 15° for best results. Pre-boring is necessary for nailing, but it holds screws well, glues easily, and finishes with a high natural polish.

MAIN USES: Goncalo Alves is used for fine furniture and cabinetry, carving, turnery such as bowls and trays, specialty items such as knife handles, brush backs, and archery bows, and for decorative and figured veneers.

Granadillo

Scientific Name: *Platymiscium yucatanum* **Distribution:** Central & South America
Other Names: Macacauba, Hormigo, Orange Agate, Coyote, Nicaraguan Rosewood

DESCRIPTION: Granadillo can be a substitute for rosewood or cocobolo. It ranges in color from light red to dark red or brown, with the possibility of purple and black veining. It is a fine textured, tight grained, heavy, hard, and dense wood. The grain may be interlocked. Granadillo is an oily wood that has a pleasant scent when cutting, similar to rosewood. **Weight:** 56-75 lbs/ft³ (4.25 lbs/bd ft) **Specific Gravity:** 0.95 **Janka Hardness:** 2700 lb_f

WORKING PROPERTIES: Granadillo works well with hand and power tools, and turns very well. Pre-boring is recommended for nails and screws. The oils produce a natural polished finish. Urethane and lacquer finishes may not adhere or cure.

MAIN USES: Granadillo is a beautiful wood used in gunstocks, fine furniture, cabinetry, box making, wooden jewelry, decorative veneers, flooring, musical instruments, violin bows, wood turning, billiard cues, pens, inlays, handles, carving, and other specialty items.

Hickory and Pecan

Scientific name: *Carya spp* **Distribution:** S.E. Canada and Eastern USA
Other Names: Pignut hickory, mockernut hickory, shellbark hickory, shagbark hickory, red or white hickory

DESCRIPTION: Hickory is the hardest, heaviest, and strongest American wood in common use. The sapwood of hickory is white, tinged with inconspicuous fine brown lines, while the heartwood is pale to reddish brown. Both are coarse-textured and the grain is fine, usually straight, but can be wavy or irregular. The density and strength of the hickories will vary according to the rate of growth, with the true hickories generally showing higher values than the pecan hickories. The wood is well known for its very good strength and shock resistance. It is extremely tough and resilient, even textured, and quite hard. It has excellent steam-bending properties. **Weight:** 51 lbs/ft³ (4.25 lbs/bd ft) **Specific Gravity:** 0.82 **Janka Hardness:** 1820 lb_f

WORKING PROPERTIES: The Hickories can be difficult to machine and glue, and are very hard to work with hand tools, so care is needed. The wood is stringy and there is a tendency for the wood to tear out when planing. Keep tools very sharp. Hickories hold nails and screws well, but there is a tendency to split, so pre-boring is advised. The wood can be sanded to a good finish. It takes bleaching treatments, stains, and finishes very well.

MAIN USES: Hickory is used in tool handles, furniture, cabinetry, flooring, paneling, wooden ladders, dowels and sporting goods.

Iroko

Scientific Name: *Chlorophora excelsa* **Distribution:** West and East Africa
Other Names: African Teak

DESCRIPTION: Iroko is golden-orange to brown, with lighter lines visible on flat sawn surfaces. The material may contain large, hard deposits of calcium carbonate in cavities, and the wood around them may be darker in color. The grain is interlocked and sometimes irregular and the texture rather coarse, but even.

Weight: 40 lbs/ft³ (3.50 lbs/bd ft) **Specific Gravity:** 0.64 **Janka Hardness:** 1260 lbf

WORKING PROPERTIES: Iroko works satisfactorily with hand and power tools, but when calcareous stone deposits are present, a moderate to severe blunting effect on cutting edges may occur. Reducing the cutting angle to 15° is necessary for a smooth finish in planing quartersawn surfaces due to the interlocked grain. The wood nails and screws well, glues satisfactorily, and when the grain is filled, an excellent finish can be obtained.

MAIN USES: Iroko is used in ship and boat building, interior and exterior joinery, laboratory benches, furniture, carving, flooring, plywood, wall paneling, flush doors, decorative veneering, and structural timber suitable for piling and marine work.

Jarrah

Scientific Name: *Eucalyptus marginata* **Distribution:** West and Southwest Australia

DESCRIPTION: The heartwood of Jarrah is a rich, dark, brownish-red, sometimes marked by short, dark brown radial flecks on the end grain and boat shaped flecks on flat sawn surfaces which enhance its decorative value. The grain is usually straight, but is often interlocked or wavy. Jarrah is durable in the outdoors, and is both termite and rot resistant.

Weight: 50 lbs/ft³ (4.20 lbs/bd ft) **Specific Gravity:** 0.80 **Janka Hardness:** 1860 lbf

WORKING PROPERTIES: Jarrah is rather difficult to work with hand tools, and fairly hard to machine. A reduced cutting angle of 15° is advised to prevent wavy or interlocked grain from tearing out. There is a moderate blunting effect on cutting edges. Pre-boring is necessary for nails and screws. Glue properties are good. It takes a high polish.

MAIN USES: Jarrah is used for shipbuilding, flooring, cabinetwork, furniture, rafters, joists, doors, windowsills, wharves, fence posts, railway ties, agricultural implements, tool handles, interior fittings, plywood, turning, and carving.

Jatoba

Scientific Name: *Hymenaea courbaril* **Distribution:** *Central and South America; West Indies*

Other names: Courbaril (often referred to as Brazilian cherry, although it is not a cherry wood.)

DESCRIPTION: The heartwood of Jatoba varies in color from a salmon-red to an orange-brown when freshly cut, and darkens to a red-brown when seasoned. It is frequently marked with dark streaks. The sapwood can be wide and is much lighter in color – white, pink, or gray. Jatoba is hard, heavy, and dense. The wood has a natural luster, with a medium to coarse texture. The wood is relatively stable once dried properly. It has a moderate steam-bending rating. **Weight:** 56 lbs/ft³ (4.67 lbs/bd ft) **Specific Gravity:** 0.91 **Janka Hardness:** 2690 lbf

WORKING PROPERTIES: Due to the high density and toughness of Jatoba, it can be hard to work, having a severe blunting effect on tools. A reduced cutting angle of 20° and the use of carbide cutters is recommended. The interlocked grain causes some difficulty in planing. Jatoba has good gluing properties. It must be pre-bored for nails and screws. It turns well. It sands and finishes easily and stains well (if you must). Polishing can create a wonderful luster.

MAIN USES: Jatoba is often used in flooring, stair treads, athletic equipment, tool handles, railroad ties, gear cogs, wheel rims, furniture, interior work, boxes, crates, and joinery.

Leopardwood

Scientific Name: *Roupala montana* **Distribution:** *Central and South America*

DESCRIPTION: The heartwood of Leopardwood is reddish-brown and, when quartersawn, numerous broad rays are present as fleck figure which resemble leopard spots. It looks very similar to Lacewood, but is darker brown, denser, and heavier. This wood is rich in texture and has tight grain. **Weight:** Approx. 45 lbs/ft³ (4.25 lbs/bd ft) **Specific Gravity:** Approx. 0.73-0.89 **Janka Hardness:** 2150 lbf

WORKING PROPERTIES: Leopardwood works well with hand or power tools, is easy to glue, and sands to a smooth finish. Sharp tools are required to turn it successfully.

MAIN USES: Leopardwood is used in inlays, pens, stair works, dining room furniture, cabinetry, interior trim, flooring, and desks.

Limba, Black

Scientific Name: *Terminalia superba* **Distribution:** *West Africa*

Other Names: Dark Limba, Dark Afara, Korina, Offram

DESCRIPTION: Black Limba is pale yellow-brown to straw colored with gray-black streaks. Occasionally a worm hole, accompanied by a long, orange streak, is present. It is a close, straight-grained timber, sometimes with interlocked or wavy grain producing excellent figure. It has a moderately coarse, but even, texture. **Weight:** 34 lbs/ft³ (3.25 lbs/bd ft) **Specific Gravity:** 0.55 **Janka Hardness:** 670 lbf

WORKING PROPERTIES: Black Limba works easily with hand or power tools, although somewhat brittle with a tendency to split. It glues and sands well to a polish, and readily accepts a wide variety of finishes.

MAIN USES: Black Limba is used for contemporary furniture, guitars, architectural paneling, interior joinery, desks, turnery, coffins, general woodwork, and light construction.

Mahogany, African

Scientific Names: *Khaya* spp.
Africa

Distribution: Tropical West, Central, and East

DESCRIPTION: The heartwood of African Mahogany varies from light to deep reddish-brown. The grain is straight to interlocked, moderately coarse to medium textured. There is little to no figure. The logs may have tension wood (brittle heart or soft heart) and cross fractures or heartbreaks. **Weight:** 34-36 lbs/ft³ (3.25 lbs/bd ft) **Specific Gravity:** 0.64 **Janka Hardness:** 1070 lbf

WORKING PROPERTIES: Tension wood and interlocked grain in African Mahogany can cause woolliness. There is a moderate blunting effect on cutting edges. To avoid tear out when planing, a reduced cutting angle of 15° to 20° is desirable. Nail, screw, and glue properties are good. It may be sanded, stained, and polished to an excellent finish.

MAIN USES: African Mahogany is widely used for furniture, cabinets, office, shop and bank fittings, interior joinery, boat building, and vehicle bodies. It is used extensively for laminations, especially in cold molded processes.

Mahogany, Genuine

Scientific Name: *Swietenia macrophylla*
America

Distribution: Fiji, Central and South

Trade or Common Name: Mahogany, true mahogany, bigleaf mahogany, Honduras mahogany

Other Names: Zopilote gateado (Mexico); Araputanga (Brazil), Aguano, Mogno

DESCRIPTION: Genuine Mahogany varies from yellowish, reddish, pinkish, or salmon colored when freshly cut, to a deep, rich red to reddish-brown as the wood matures with age. It has fine to medium texture. The grain is uniform to interlocking, ranging from straight to wavy to curly. Irregularities in the grain often produce highly attractive figures such as fiddleback or mottle. It has moderately good steam bending properties. **Weight:** 34-40 lbs/ft³ (3.33 lbs/bd ft) **Specific Gravity:** 0.59 **Janka Hardness:** 900 lbf

WORKING PROPERTIES: Genuine Mahogany works well with hand and power tools, glues easily, has good nail and screw properties, and turns and carves superbly. It takes a finish well and polishes to a high luster.

MAIN USES: Genuine Mahogany is regarded by many as the world's premier wood for fine cabinetry, high-class furniture, chests, chairs, trimming fine boats, canoes, pianos, drum sticks, violins and violin bows, xylophones, and other musical instruments, sculpture, joinery, turnery, figured and decorative veneer, interior trim, and carving.

Mahogany, Philippine

Scientific Name: *Shorea spp.* **Distribution:** *Meranti (Southeast Asia); White Lauan (Philippines)*

Other Equivalents: Light Red Meranti, Red Lauan

DESCRIPTION: Philippine Mahogany refers to several species of wood found in southeast Asia. The heartwood is pale pink to light red-brown to red-brown. The surface is fairly lustrous. The grain is interlocked and gives rise to stripe figure. The texture is coarse and even. Resin canals with white contents occur in concentric lines on end surfaces, but the wood is not resinous. **It has a good steam bending classification. Weight:** 34 lbs/ft³ (3.25 lbs/bd ft) **Specific Gravity:** 0.55 **Janka Hardness:** 800 lbf

WORKING PROPERTIES: Philippine Mahogany works well with hand and power tools with only slight blunting effect on tools. The sawn surfaces are fibrous. Nail and screw properties are good. It glues, stains, and polishes well.

MAIN USES: Philippine Mahogany is used in furniture, cabinet making, boat planking, decorative work, shop and office fittings, show cases, counter tops, paneling, ceiling, flooring, shelving, door and window frames, coach work, wooden tubs, fancy boxes, coffins, sliced veneers, rotary-cut veneer and plywood.

Maple, Hard

Scientific Name: *Acer saccharum (Sugar maple)* **Distribution:** *UK, USA, Canada*

Other Names: Rock maple, White maple (sapwood), Sugar maple, Black maple, Sweet maple

DESCRIPTION: Hard Maple sapwood is creamy white with a slight reddish-brown tinge, and the heartwood varies from light to dark reddish-brown or gray. The amount of darker brown heartwood can vary significantly according to growing region. Both sapwood and heartwood can contain pith fleck. The wood has a close, fine, uniform texture and is generally straight-grained, but it can also occur as curly, fiddleback, and birdseye figure. The wood is hard and heavy with good strength properties, in particular its high resistance to abrasion and wear. Hard maple dries slowly with high shrinkage, so it can be susceptible to movement in performance. **It also has a good steam-bending classification. Weight:** 45 lbs/ft³ (4.25 lbs/bd ft) **Specific Gravity:** 0.72 **Janka Hardness:** 1450 lbf

WORKING PROPERTIES: With care, Hard Maple machines well and turns well, with moderate blunting of cutting edges. Use a reduced cutting angle for interlocked, curly, or birdseye figure. Hard maple glues well. Pre-boring is recommended for nails and screws. A wood conditioner is recommended to achieve an even tone prior to staining. Hard Maple polishes well and takes finish satisfactorily. It is suitable for enamel finishes and brown tones.

MAIN USES: Hard Maple is used in furniture, kitchen cabinets, worktops, table tops, butcher blocks, toys, kitchenware, and millwork, including stairs, handrails, mouldings, and doors, ballroom and gymnasium floors and other flooring, and paneling.

Maple, Soft

Scientific Name: *Acer rubrum* (Red maple), *Acer saccharinum* (Silver maple)

Distribution: *Canada and Eastern USA*

Other Names: Red maple (quilted maple), Silver maple

DESCRIPTION: In most respects Soft Maple is very similar to hard maple, but it is less hard. Generally, the sapwood is grayish-white, sometimes with darker colored pith flecks. The heartwood varies from light to dark reddish-brown. The lumber is generally sold unselected for color. It dries slowly with minimal degrade, and there is little movement in performance. The wood is usually straight-grained, but can also occur in beautiful fiddleback or quilted figure. Wormy Soft Maple has small worm holes with bluish-green streaks running lengthwise with the grain above and below the holes. It has medium bending and crushing strength, and is low in stiffness and shock resistance. It has good steam-bending properties. **Weight:** 34 lbs/ft³ (3.25 lbs/bd ft) **Specific Gravity:** 0.54 **Janka Hardness:** 950 lbf

WORKING PROPERTIES: Soft Maple machines well with hand and power tools, with a moderate blunting effect on cutting edges. It glues satisfactorily. Pre-boring may be necessary for nails and screws. A wood conditioner applied prior to staining is recommended to achieve an even tone. Soft Maple finishes well and is suitable for enamel finishes.

MAIN USES: Soft Maple is used in furniture, paneling, millwork, kitchen cabinets, mouldings, doors, musical instruments, and turnings. It is often used as a substitute for hard maple or stained to resemble other species, such as cherry. Its physical and working properties also make it a possible substitute for beech.

Oak, American Red

Scientific name: *Quercus rubra*

Distribution: *Eastern Canada and USA*

Other Names: Northern red oak

DESCRIPTION: The sapwood of Red Oak is white to light brown, and the heartwood is pinkish to reddish-brown. The wood is similar in general appearance to white oak, but with a slightly less pronounced figure due to the smaller rays. The wood is mostly straight-

grained, with a coarse texture. **Red Oak is often available in quartersawn and rift sawn lumber, where the grain is straight on both cuts. Ray fleck is visible on the quartersawn wood. Weight:** 48 lbs/ft³ (4.0 lbs/bd ft) **Specific Gravity:** 0.77 **Janka Hardness:** 1290 lb_f

WORKING PROPERTIES: Red Oak machines well. Nail and screw properties are good, although pre-boring is recommended. It glues and sands well. It stains well with a wide range of finish tones. It finishes very well.

MAIN USES: Red oak is used in furniture, flooring, architectural millwork, mouldings, doors, kitchen cabinets, paneling, and caskets.

Oak, English Brown

Scientific Name: *Quercus robur*
North Africa

Distribution: *UK, Europe, Asia Minor,*

Other Names: **European Oak, Sessile or Durmast Oak, Pedunculate Oak**

DESCRIPTION: Brown Oak results from a fungal attack (*Fistulina hepatica* a.k.a. mushroom) on a white oak tree. The fungus turns the heartwood medium to dark brown and kills the tree. The wood is usually straight grained. The typical silver grain figure is visible on the quartered wood due to broad rays. English Brown Oak has a good steam bending classification. **Weight:** 45 lbs/ft³ (3.75 lbs/bd ft) **Specific Gravity:** 0.67
Janka Hardness: 1120 lb_f

WORKING PROPERTIES: English Brown Oak has a moderate to severe blunting effect on cutting tools, which should be kept sharp. Use a 20° planing or moulding angle for quartersawn stock. The wood takes waxing, liming, fuming, and polishing treatments very well. Use non-ferrous or galvanized metals if they contact the wood, as the acid in the wood causes corrosion.

MAIN USES: English Brown Oak is ideal for tight cooperage for cognac, wine, and beers, cabinets, furniture, boat building, dock and harbor work, railway wagons, ladder rungs, sills, thresholds, high-class joinery, coffins, church furniture, truck beds, and for all purposes requiring contact with the ground.

Oak, White

Scientific name: *Quercus alba* **Distribution:** *Eastern USA and Southeastern Canada*

Other Names: Northern oak

DESCRIPTION: White Oak sapwood is light-colored and the heartwood is light to dark brown. It is mostly straight-grained with a medium to coarse texture, with longer rays than red oak. White oak also has more figured grain. **It is often available in quartersawn and rift sawn lumber, where the grain is straight on both cuts. Ray fleck is visible on the quartersawn wood.** White oak has a distinct smell when cut. **Weight:** 47 lbs/ft³ (4.1 lbs/bd ft) **Specific Gravity:** 0.76 **Janka Hardness:** 1360 lb_f

WORKING PROPERTIES: White Oak machines well and nails and screws well, although pre-boring is advised. Since it reacts with iron, galvanized nails are recommended. Its adhesive properties are variable. It stains to a good finish and can be stained with a wide range of finish tones. It finishes well.

MAIN USES: White Oak is used in furniture, flooring, architectural millwork, mouldings, doors, kitchen cabinets, paneling, barrel staves (tight cooperage), and caskets.

Olivewood

Scientific name: *Olea spp.(olea europaea, o.capensis)* **Distribution:** Europe and Eastern Africa

DESCRIPTION: Olive is cream to yellowish brown, with darker brown or black streaks. The color may deepen with age. The figure is sometimes curly or wavy, or as a burl. The grain may be straight, interlocked, or wild, and the texture is uniform and fine. The trees are generally not available for lumber, as they are used for production of olives and olive oil, and the trees have a long life span. **Weight:** 62 lbs/ft³ (5.17 lbs/bd ft) **Specific Gravity:** 0.99 **Janka Hardness:** 2700 lbf

WORKING PROPERTIES: Olive wood generally works well, but any wild grain could result in tearout. May see movement in service; poor stability. Turns well. It glues and finishes well. Can cause eye and skin irritation.

MAIN USES: Olivewood is used in turning objects, veneers, furniture, and small specialty items.

Padauk, African

Scientific Name: *Pterocarpus soyauxii* **Distribution:** Central and West Tropical Africa
Other Names: Camwood, Barwood, Corail

DESCRIPTION: Padauk is bright orange when freshly cut. The heartwood ages to a rich red to purple-red, and the sapwood to a pale-beige. It has straight to interlocked grain with a moderately coarse texture and large pores. It is hard, heavy, and strong with exceptional decay resistance and dimensional stability. Watch out for the orange sawdust! It can stain clothing. Not suitable for steam bending. **Weight:** 45 lbs/ft³ (3.75 lbs/bd ft) **Specific Gravity:** 0.75 **Janka Hardness:** 1970 lbf

WORKING PROPERTIES: Padauk works well with hand and power tools. It glues easily and holds nails and screws well. It finishes to a beautiful sheen without the need for stain. Due to the oil in Padauk, polyurethane finishes may dry very slowly.

MAIN USES: Padauk is a good tone wood for musical instruments, especially xylophones. It is also used in high-end cabinets, furniture, carving, veneer, inlay, flooring, dyewood, joinery, dowels, shuttles, spindles, paddles, turnery, knife and tool handles, and boat building.

Pine, Eastern White

Scientific Name: *Pinus strobus* **Distribution:** Eastern Canada and USA

Other Names: Yellow pine, white pine, northern white pine, northern pine, Weymouth pine, Quebec yellow pine

DESCRIPTION: Eastern White Pine heartwood is creamy white, pale yellow, or light brown, and the sapwood is creamy white. It yellows with age. It is straight-grained with a fine, uniform texture. Eastern White Pine is soft, weak, and lightweight with low decay resistance and shock resistance. It is very stable in service. It is not suitable for steam bending. **Weight:** 24 lbs/ft³ (2.25 lbs/bd ft) **Specific Gravity:** 0.39 **Janka Hardness:** 380 lb_f

WORKING PROPERTIES: Eastern White Pine works very easily with most hand and power tools, although turning is only fair. It carves quite well. It holds nails and screws well without the need to pre-drill, and glues, paints and varnishes well. A sealer is recommended to prevent blotches when staining.

MAIN USES: Eastern White Pine is used for carvings and sculpture, millwork, sash, doors, trim, paneling, cabinetry, furniture, toys, novelties, musical instrument components, caskets, boxes, match sticks, veneer, dowels, patterns, and construction lumber.

Pine, Sugar

Scientific Name: *Pinus lambertiana* **Distribution:** Southern Oregon to Southern California and Mexico, usually in higher elevations

Other Names: Big pine, gigantic pine, great sugar pine, shade pine

DESCRIPTION: The heartwood of Sugar Pine is a pale reddish-brown and the sapwood is white to pale yellowish-white. The wood is light, soft, weak, and not stiff. It typically has a straight and even grain with a fairly coarse and very uniform texture and distinctive, dark brown, resin canals. **It has high dimensional stability in service.** Sugar Pine has been described as the finest of all pines for size. The lower limbs of the Sugar Pine are very high, resulting in long, straight lengths of clear lumber. **Weight:** 22 lbs/ft³ (2.1 lbs/bd ft) **Specific Gravity:** 0.36 **Janka Hardness:** 380 lb_f

WORKING PROPERTIES: Sugar Pine works well with hand or power tools. It has only a slight blunting effect on cutting edges. It is exceptionally easy to work. The wood moulds, turns, mortises, planes, glues, nails, screws, and sands well. Staining, painting, and sand polishing are all satisfactory.

MAIN USES: Sugar Pine is used for carving, moulding, panels, shingles, rafters, organ pipes, railing and stair work, boxes, crates, doors, sash, blinds, pattern making, and boat decks.

Poplar

Scientific Name: *Liriodendron tulipifera* **Distribution:** Eastern USA

Other Names: Yellow poplar, tuliptree, whitewood

DESCRIPTION: The sapwood of Poplar is creamy white and may be streaked, with the heartwood varying from pale yellowish-brown to olive-green. The green color in the heartwood will tend to darken on exposure to light and turn brown. The wood has a medium to fine texture, is straight-grained, and has a uniform texture. **Weight:** 28 lbs/ft³ (2.58 lbs/bd ft) **Specific Gravity:** 0.45 **Janka Hardness:** 540 lb_f

WORKING PROPERTIES: Poplar is a versatile wood that is easy to machine, plane, turn, glue and bore. It dries easily with minimal movement in performance and has little tendency to split when nailed. It takes and holds paint, enamel and stain exceptionally well.

MAIN USES: Poplar is used in light construction, furniture, kitchen cabinets, doors, musical instruments, exterior trim and siding, paneling, mouldings, millwork, edge-glued panels, drawer interiors, turnings and carvings.

Purpleheart

Scientific Name: *Peltogyne* spp. **Distribution:** Central America and Tropical South America

Other Names: Amaranth, Violetwood

DESCRIPTION: One of the most distinctive woods in the world, Purpleheart is prized for its very unusual, deep purple color. When freshly cut, this dense hardwood is light brown, but within minutes, the surface turns an astonishing bright purple. Upon prolonged exposure to sunlight, the color gradually changes to a chocolate-purple color. The purple is restored with a fresh cut. This beautiful wood is straight to wavy grained and often interlocked. It is fine to moderate textured and fairly smooth, with a medium to high luster. **Purpleheart is very hard, heavy, strong, and tough.** **Weight:** 54 lbs/ft³ (4.5 lbs/bd ft) **Specific Gravity:** 0.86 **Janka Hardness:** 2520 lb_f

WORKING PROPERTIES: Purpleheart is difficult to work with hand and power tools, and it has a severe blunting effect on cutting edges, which must be kept very sharp to prevent burning. Use high speed steel knives and run it slowly through machines. It turns smoothly. It is easy to glue. Pre-boring is required for nails and screws. It finishes well and is highly durable.

MAIN USES: Purpleheart is prized for fine inlay work, turnery, fine furniture, cabinetry, parquet flooring, decorative and figured veneer, and many specialty items such as billiard cue butts and carving. It is also tough and durable enough to use in outdoor construction work, bridge building, piling, vats, gymnasium equipment, shafts, tool handles, boat building, and trailer and truck beds where strength is required.

Rosewood, Honduras

Scientific Name: *Dalbergia stevensonii*

Distribution: Belize

Other Names: Nogaed

DESCRIPTION: Honduras Rosewood ranges from pink to dark, purple-brown with black markings. Many pieces have a distinctive wavy grain. It is a fine to medium-textured, tough, durable member of the rosewood family. **This is a beautiful, hard, and heavy wood. It is too heavy for bending. It has a pleasant, distinctive scent when milling.**
Weight: 60 lbs/ft³ (5.67 lbs/bd ft) **Specific Gravity:** 0.96 **Janka Hardness:** 2200 lb_f

WORKING PROPERTIES: Honduras Rosewood is somewhat difficult to work, with a moderate blunting effect on cutting edges. A reduced cutting angle of 20° should be used when planing boards with interlocked and wavy figure. It is excellent for turning. Use care in gluing due to waxy resins. Pre-boring is recommended for nails and screws. Some finishes may not dry properly due to the oils in the wood, but a fine finish can be produced with care. The surface of Honduras Rosewood can feel oily and slippery. Take care to firmly hold the wood in place while working with it.

MAIN USES: Honduras Rosewood is used in musical instruments (marimba and xylophone bars, fingerboards for stringed instruments, piano parts, and harp bodies), turnery, marquetry, furniture, cabinets, billiard tables, and small decorator items.

Sapele

Scientific Name: *Entandrophragma cylindricum*

Distribution: West and East Africa

Other Names: Scented mahogany, sapelewood, aboudikrou, sapelli, aboudirko, penkwa, muyovu, libuyu, and sapele mahogany

DESCRIPTION: The heartwood of Sapele is medium red to dark, reddish-brown. It has a well-defined ribbon-stripped appearance on the quartersawn surfaces. Sapele may also have wavy, fiddleback, or pomelle figure. The grain is interlocked, and the texture is fine. The quartersawn wood has less tendency to distort when drying than plain sawn material. There is medium movement in service. Sapele has a pleasant, cedar-like scent when freshly cut. It has a poor steam bending classification. **Weight:** 39 lbs/ft³ (3.25 lbs/bd ft)
Specific Gravity: 0.62 **Janka Hardness:** 1410 lb_f

WORKING PROPERTIES: Sapele works easily enough, although the surfaces may tear out when planing due to interlocked grain. It glues, screws, and nails well. It takes stain with care (why would you stain Sapele?), and it finishes very well, particularly if the grain is filled. When finished, quartersawn Sapele has a three dimensional, high luster appearance.

MAIN USES: Sapele is used for many of the same applications as true mahogany: furniture, cabinetry, office furniture, decorative veneers, paneling, flooring, interior and exterior joinery, window and door frames, doors, staircases, boat and vehicle construction, sporting goods, countertops, musical instruments, and piano cases.

Shedua

Scientific Name: *Guibourtia ehie*
Nigeria, Gabon

Distribution: *Ivory Coast, Ghana, southern*

Other Names: **Ovangkol**, ehi, anokye, hyeduanini (Ghana); amazoue, amazakoue (Ivory Coast).

DESCRIPTION: Shedua is yellow to chocolate-brown colored, with grayish black stripes. The grain is interlocked and the texture moderately coarse. The quartersawn wood has a beautiful ribbon stripe appearance. Shedua is a hard and heavy wood. It has medium strength properties. It has a poor steam bending classification, as only shallow bends are possible. **Weight:** 50 lbs/ft³ (4.20 lbs/bd ft) **Specific Gravity:** 0.80 **Janka Hardness:** 1330 lbf

WORKING PROPERTIES: Shedua is moderately difficult to work, and there is a moderate blunting effect on tools due to the silica content of the wood. Cutting edges must be kept thin and sharp. The wood saws slowly but well. Due to the interlocked grain, reduce the cutting angle to 20° when planing to obtain a good finish. Shedua nails and screws well and glues without difficulty. It can be stained and brought to an excellent finish.

MAIN USES: Shedua is suitable for superior furniture making and high-class joinery, cabinetmaking, domestic flooring, turnery, shop fitting and interior decorative fittings, and decorative veneers for architectural paneling and doors.

Teak (FEQ - First European Quality)

Scientific Name: *Tectona grandis*
West Africa, Caribbean

Distribution: *Burma, India, S.E. Asia, East and*

Other Names: Mai sak, Pahi

DESCRIPTION: Teak is a very valuable wood and is prized throughout the world. It is a beautiful golden to dark brown, sometimes reddish-brown, with a straight grain, sometimes wavy. Teak is rich in natural oils and is very durable and resistant to moisture and the drying effects of exposure to weather. Teak is unique in that it does not cause rust or corrosion when in contact with metal. **Weight:** 40 lbs/ft³ (3.60 lbs/bd ft) **Specific Gravity:** 0.65 **Janka Hardness:** 1070 lbf

WORKING PROPERTIES: Teak offers medium resistance to tools, but has a severe blunting effect on cutters. Tungsten carbide tipped saws are suitable for cutting teak. Gluing is good on freshly planed or sanded surfaces, but may be difficult if the oils have time to come to the surface. Pre-boring is necessary for nails and screws. It stains well and takes a satisfactory finish, especially an oil finish. Fine machine dust is a skin irritant.

MAIN USES: Teak is sought for the decks, trim, and detail work in boats. It is also used in fine furniture, flooring, carving, joinery, cabinetwork, paneling, turnery and veneer.

Walnut, Black

Scientific Name: *Juglans nigra* **Distribution:** Eastern USA and Ontario, Canada
Other Names: American walnut, Virginia walnut, Canaletto, Canadian walnut

DESCRIPTION: The sapwood of Black Walnut is creamy white, while the heartwood is light brown to dark, chocolate-brown, occasionally with a purplish cast and darker streaks. The wood develops a rich patina that grows more lustrous with age. Walnut is usually supplied steamed to darken the sapwood. The wood is generally straight-grained, but sometimes has wavy or curly grain that produces an attractive and decorative figure. This species produces a greater variety of figure types than any other. Rift sawn Black Walnut produces straight, ribbon striped figure. **Weight:** 40 lbs/ft³ (3.5 lbs/bd ft) **Specific Gravity:** 0.64 **Janka Hardness:** 1010 lbf

WORKING PROPERTIES: Black Walnut works easily with hand and power tools. It nails, screws, and glues well. It holds paint (if you must!) and stain very well for an exceptional finish. Walnut has good dimensional stability.

MAIN USES: Black Walnut is used in furniture, cabinets, architectural millwork, doors, flooring, paneling, and gun stocks. Walnut is a favored wood for using in contrast with lighter-colored species.

Wengé

Scientific Name: *Millettia laurentii* **Distribution:** Zaire, Cameroon Republic, Gabon
Other Names: Pallissandre, Dikela

DESCRIPTION: The heartwood of Wengé is dark brown, almost black. On the quarter sawn surface, fine, pencil-thin, light tan lines are interspersed with blackish-brown stripes. On the flat sawn surface, the light lines show up as undulating streaks, like waves on the water. Wengé is straight grained, and very coarse textured. It is very dense, hard, and heavy. **It has a low steam bending classification.** **Weight:** 55 lbs/ft³ (4.58 lbs/bd ft) **Specific Gravity:** 0.88 **Janka Hardness:** 1930 lbf

WORKING PROPERTIES: Wengé provides a challenge to the woodworker. The wood has a moderate blunting effect on cutting edges and sharp tools are essential. The long coarse texture tends to tear out while planing. Pre-boring is required for nails and screws. Wengé will glue well if the gluing is done as soon as the surface is cut, planed, sanded, or scraped. This wood will sand reasonably well and give an acceptable finish if one is aware of the oily surface. It is a very porous wood, so pore filling is essential if a fine finish is required. The irritating dust of Wengé can adversely affect woodworkers. Its toxicity is well known in many parts of the world because the bark of several species is ground into a powder to stupefy fish for harvest. Dust collection systems are essential when working with this wood.

MAIN USES: Wengé is used in furniture, interior and exterior joinery, turning, carving, general construction work, flooring strips and blocks, and paneling and veneers for furniture and cabinets. It is selected for its color and dramatic appearance in any project

that seems appropriate. It is definitely not used in acoustic guitars, because its porosity dampens the sound waves.

Yellowheart

Scientific Name: *Euxylophora Paraensis* **Distribution:** *Brazil*

Other Names: Pau amarelo, satinwood

DESCRIPTION: Yellowheart heartwood is bright yellow in color throughout the wood. It has a high, natural luster. The wood is strong, heavy, and dense. It usually has fine, straight grain, but irregular grain is sometimes present. It has medium texture. **Weight:** 54 lbs/ft³ (4.5 lbs/bd ft) **Specific Gravity:** 0.70 **Janka Hardness:** 1790 lbf

WORKING PROPERTIES: Yellowheart works easily with hand and power tools, with a moderate blunting effect on cutting edges. Pre-boring is recommended for nails and screws. It glues well and takes finish well. It produces a good lustrous surface.

MAIN USES: Yellowheart is used in decorative veneer, inlay, paneling, turning, tool handles, cabinetry, flooring, marquetry, and furniture.

Zebrawood

Scientific Name: *Microberlinia Brazzavillensis* **Distribution:** *West Africa (Gabon, Cameroon Republic)*

Other Names: Zebrano, Zingana, Allene, Ele, Amouk

DESCRIPTION: Zebrawood heartwood is a golden-yellow with narrow veining or streaks of dark brown to black, which gives quartered surfaces a zebra-stripe appearance. The grain is interlocked or wavy and produces alternating hard and soft-grained material. The texture is coarse with a lustrous surface. **Weight:** 46 lbs/ft³ (3.9 lbs/bd ft) **Specific Gravity:** 0.74 **Janka Hardness:** 1830 lbf

WORKING PROPERTIES: Zebrawood works easily with hand and power tools, although its alternating grain structure makes it difficult to achieve a good machine finish. Gluing is satisfactory with care. It finishes well when filled.

USES: Zebrawood is mainly used for decorative veneer, cross bandings, inlay, fancy goods, marquetry, and paneling. It is used primarily for decorative purposes where strength and mechanical properties are unimportant.

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